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10/677,532	10/03/2003	Hwa-jun Kim	1793.1022	9331

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EXAMINER

MERCEDES, DISMERY E

ART UNIT	PAPER NUMBER
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2651

DATE MAILED: 11/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/677,532

Applicant(s)

KIM ET AL.

Examiner

Dismery E. Mercedes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☒ Claim(s) 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2003 and 08 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 9/15/2005 have been fully considered but they are not persuasive.

Regarding Claims 1,11 and 13 the Applicant argues that neither AAPA nor Suzuki et al. discloses the limitation "extracting read gain characteristics while varying an off-track amount, measuring an off-track amount at a place where the read error occurred, based upon the read gain characteristics; and reading data using the measured off-track amount."

However, the examiner respectfully disagrees. Suzuki does disclose extracting read gain characteristics (i.e. amplitude profile) while varying an off-track amount (the off-track amount – direction is varied); measuring an off-track amount at a place where the read error occurred, based upon the read gain characteristics; and reading data using the measured off-track amount (as depicted in Figs.8a-8b, 11a-11b and see col.2, lines 44-51; col.4, lines 33-61; col.13, lines 44-60; col.16, line 52- col.17, line 35; col.18, line 61-col.19, line 31).

Regarding Claim 8, In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "measuring the off-set track amount at a location wherein a read error occurs comprises extracting read gain characteristics while varying the off-track amount, and determining an off-track direction and a degree based upon the read gain characteristics") are not recited in the rejected claim(s).

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Therefore, based on the above rationale, the limitations as claimed are still met, thus the combination of AAPA in view of Suzuki et al. is proper and the rejection is maintained.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US 6,650,491 B2), in view of Applicant's Admitted Prior Art, hereinafter AAPA (of instant application, pages 1-3 of the specification and FIG.1).

Suzuki et al. discloses an off-track retry method for recovering data incorrectly read due to a read error caused by an off-track error in a disk drive, the off-track retry method comprising: extracting read gain characteristics while varying an off-track amount; measuring an off-track amount at a place where the read error has occurred, based upon the read gain characteristics (as depicted in Figures 11a-11b & FIG.6, "S5-S7"); reading data using the determined off-track amount (and as depicted in Figs.8a-8b, 11a-11b and see col.2, lines 44-51; col.4, lines 33-61; col.13, lines 44-60; col.16, line 52- col.17, line 35; col.18, line 61-col.19, line 31).

Suzuki et al. does not specifically disclose determining whether the read data is normal; and determining whether the data incorrectly read due to the read error has been recovered.

However, AAPA discloses such on (Fig.1 of instant specification).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to implement AAPA's steps to the method disclosed by Suzuki, the motivation being

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because it would provide the Suzuki's method with the enhanced capability of determining if the process was successful by verifying if the data has being successfully read.

As to Claim 2, in the obvious combination, AAPA further discloses a method wherein reading the data by moving a head away from a centerline of a track by up to a determined off-track amount; and reading the data by moving the head away from the centerline of the track by up to an off-track range having a predetermined difference with the determined off-track amount (as depicted in FIG. 1, "S106" & page 2, ¶0010 and ¶0012 of instant application).

As to Claim 3, Suzuki et al. further discloses measuring read gains while gradually varying an off-track amount within the predetermined off-track range (col.4, lines 51-52 & as depicted in Figures 8a-b, 11a-b); determining an off-track direction based upon a gradient of a curve of the measured read gains (col.4, lines 33-38 & col.4, lines 1-8); and identifying an off-track amount corresponding to a minimum of the measured read gains (col.3, lines 57-64; col.4, lines 1-8 & 40-47 and as depicted in Figures 11a and 11b)

As to Claim 4, Suzuki et al. further discloses measuring read gains at a place on the centerline of a track and a plurality of places at either side of the centerline of the track and determining an off-track direction based upon a gradient of a curve of the measured read gains (col.4, lines 33-38 and as depicted in Figures 8a-b and 11a-b); measuring read gains while gradually varying an off-track amount within a predetermined off-track range (col.4, lines 51-52 & as depicted in Figures 8a-b, 11a-b); and identifying an off-track amount corresponding to a minimum of the measured read gains (col.3, lines 57-64; & 40-47 and as depicted in Figures 11a and 11b).

As to Claim 5, Suzuki et al. further discloses determining an off-track direction and a degree to which data is recorded off-track (col.4, lines 33-38).

As to Claim 6, Suzuki et al. further discloses the off-track retry method of claim 1, wherein the read gain is smallest when data is magnetized in a negative direction off of a centerline of a desired track and the off-track amount reaches a predetermined off-track amount in the negative direction; and the read gain increases as the off-track amount increases (as depicted in Figures 11a-11b).

As to Claim 7, Suzuki et al. further discloses the read gain is smallest when data is magnetized in a positive direction off of a centerline of a desired track and the off-track amount reaches a predetermined off-track amount in the positive direction; and the read gain decreases as the off-track amount increases (as depicted in FIG.11a).

As to Claim 8, Suzuki et al. discloses an off-track retry method for recovering data comprising: measuring an off-track amount at a location where a read error occurs (col.2, lines 44-50), reading data based upon the measured off-track amount (col.4, lines 44-49).

Suzuki fails to specifically disclose determining whether the read data is normal; and determining whether the data incorrectly read due to the read error has been recovered.

However, AAPA discloses such (Fig.1 of instant specification).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to implement AAPA's steps to the method disclosed by Suzuki, the motivation being because to provide Suzuki's method with the enhanced capability of determining if the process was successful by verifying if the data has been successfully read.

As to Claim 9, Suzuki et al. further discloses extracting read gain characteristics while varying the off-track amount; and determining an off-track direction and a degree based upon the read gain characteristics (Figures 11a-11b & Figures 8a-8b, 10a-b).

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As to Claim 10, in the obvious combination, Suzuki et al. further discloses the off-track direction is identified based upon a gradient of a read gain curve showing the read gain characteristics (col.4, lines 33-38 & col.4, lines 1-8).

AS to Claim 11, Suzuki et al. discloses an off-track retry method determining an off-track direction and an off-track amount at a place where the read error has occurred and at the same time by measuring read gains at different places while gradually varying the off-track amount within a predetermined off-track range (as depicted in Figures 8a-b, 11a-b); reading data using the determined off-track direction and the off-track amount (col.4, lines 44-49 and as depicted in col.2, lines 44-51; col.4, lines 33-61; col.13, lines 44-60; col.16, line 52- col.17, line 35; col.18, line 61-col.19, line 31).

Suzuki et al. does not specifically disclose determining whether the read data is normal; and determining whether the data incorrectly read due to the read error has been recovered.

However, AAPA discloses such (on FIG.1 of instant specification).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to implement AAPA 's steps to the method disclosed by Suzuki, the motivation being because it would provide the Suzuki's method with the enhanced capability of determining if the process was successful by verifying if the data has being successfully read.

As to Claim 12, Suzuki et al. further discloses off-track direction is identified based upon a gradient of a curve of the measured read gains (col.4, lines 33-38 and as depicted in Figures 8a-b and 11a-b).

As to Claim 13, Suzuki et al. discloses an off-track retry method obtaining an off-track amount at a place where the read error has occurred by measuring a read gain a three points (as depicted in Figures 8a-b, 11a-b); reading data using the off-track amount obtained (and as depicted

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in Figs.8a-8b, 11a-11b and see col.2, lines 44-51; col.4, lines 33-61; col.13, lines 44-60; col.16, line 52- col.17, line 35; col.18, line 61-col.19, line 31).

Suzuki et al. does not specifically disclose determining whether the read data is normal; and determining whether the data incorrectly read due to the read error has been recovered.

However, AAPA discloses such (on FIG.1 of instant specification).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to implement AAPA 's steps to the method disclosed by Suzuki, the motivation being because it would provide the Suzuki's method with the enhanced capability of determining if the process was successful by verifying if the data has being successfully read.

Allowable Subject Matter

2. Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Kim et al. (US 6,275,346); Wang et al. (US 2003/0202268 A1); Fung et al. (US 5,353,170) Le et al. (US 6,008,962) ; Suzuki et al. (US 5,521,773); Yun (US 5,731,924); Nakamura et al. (US 5,818,803); Mukohara (US 5,936,789).

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dismery E. Mercedes whose telephone number is 571-272-7558. The examiner can normally be reached on Monday - Friday, from 9:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dismery E Mercedes
Examiner
Art Unit 2651

DM



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